

Association Standard Grades

# RULES

For the Grading of

WESTERN WHITE PINE  
EDGED WHITE PINE  
SUGAR WHITE PINE  
AND LARCH

## Lumber

Reported to the Bureau of Census  
and adopted by the

WESTERN  
PINE MANUFACTURERS  
ASSOCIATION

Revised Edition of March 5, 1917.



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ASSOCIATION STANDARD GRADES

# RULES

For the Grading of  
WESTERN WHITE PINE  
IDAHO WHITE PINE  
SPRUCE, WHITE FIR, CEDAR  
FIR AND LARCH

# LUMBER

Reported by the Bureau of Grades  
and Adopted by the  
WESTERN  
PINE MANUFACTURERS'  
ASSOCIATION



Revised Edition of March 1, 1917.

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## PREFACE

The rules for grading contained in this book were first adopted by the Western Pine Manufacturer's Association on February 2, 1910, upon the recommendation of its Bureau of Grade.

The manufacturers of Western White Pine, Idaho White Pine, Fir, Larch, White Fir, Cedar and Spruce lumber belonging to this Association had previously for some years been grading under the Northern Pine Manufacturers' Association rules. Some of the defects common to lumber in the Northern Pine district are not found in this territory and other defects of the above woods are not found in Northern Pine and for this reason the Western Pine Manufacturers' Association Rules were first adopted.

They are accordingly based upon the Northern Pine Rules and approximate them as closely as the types found in the territory they cover will permit.

The rules have been revised from time to time to more adequately describe the grades as actually made under the supervision of the Bureau of Grades of the Western Pine Manufacturers' Association, and its corps of inspec-

tors. The rules governing the grading of Western White Pine Common lumber are here printed separately from those governing the other woods, as experience has shown the difficulty of describing by one set of examples the grades of Western White Pine as compared with the other woods, owing to the distinctive character of its defects and the great variation in type from the rest of the woods covered by these rules.

These grades are now being manufactured in the territory between the Rocky Mountains on the east, the Cascade Mountains on the West, the British Columbian line on the North and to and including Oregon and Southern Idaho on the South.

While they aim to describe as accurately as written rules can the grades as they are made, written rules have their limitations and cannot cover all possible types and variations in a single grade.

## Re-Inspection

The members of this Association are manufacturers and shippers of lumber and maintain an expensive organization in their shipping department for the proper grading and shipping of their product.

A claim on the grade of a shipment by the customer raises the question of the capability and efficiency of the shippers organization and for his information and the customer's protection he feels the necessity of asking for an inspection on the stock in question.

Should either party having an interest in the question of grade on a shipment feel the need of an official inspection, it is within his right to call for the same, provided the stock is held intact and properly taken care of.

In the matter of cost for official association re-inspection on lumber, the grade of which has been complained of, if re-inspection shows the grade of the total amount of the item complained of to be within 5 per cent of the grade invoiced, the expense shall be borne by the complainant; if otherwise, by the shipper.



## Theory and Art of Lumber Grading.

The theory of lumber grading is the plan of separation of the various lumber products of the log into units of related value, and the means or skill employed towards this end constitutes the art which gives a quality to this work that allows it to endure.



**Rules for Grading Western White Pine, Idaho  
Pine, Fir and Larch, White Fir, Spruce and  
Cedar Lumber.**

**GENERAL INSTRUCTIONS.**

The purpose of grades is to maintain a standard or measure of value as between mills manufacturing the same or similar woods and harmonizing the natural differences existing between different stocks of lumber regardless of the character of the logs from which they are produced; so that a given grade will represent the same value and can be used for the same purpose regardless of the mill from which it comes. Uniform grades also provide both buyers and sellers of lumber with a measure by which each can determine whether he is buying or selling full value.

1. No arbitrary rules for the inspection of lumber can be maintained with satisfaction; the variations from any given rule are numerous and suggested by practical common sense, so nothing more definite than the general features of different grades should be attempted by rules of inspection. The following, therefore, are submitted as the general character-

istics of the different grades.

2. In the grading of Finish and Common lumber the practice is to use the better face of the board for inspection to determine grade and the face side of the board is the side showing best quality or appearance.

3. The appearance and quality of the back of a piece of Finish lumber is a factor in determining grades with more consideration given to the back of B and Better Select pieces than to C Select.

4. A large amount of lumber is manufactured in five-quarter, and six-quarter, and eight-quarter, and thicker for factory demand and this stock is graded under the special rules that are provided for the grading of Shop lumber.

5. Defects in lumber should be distributed in proportion to the size of the piece. Long or wide pieces of the same grade may contain more and greater defects than shorter or narrower pieces. The same percentage should be observed in both long and short, wide and narrow.

6. Wane in lumber is a defect which cannot be described by rule with satisfaction, and

therefore must be left to the judgment of the inspector.

7. In a general way, all stock run to a pattern shall receive the same general inspection as stock run S2S or S4S.

8. The lowering of grade on the face side on account of wane, or other serious defects, should be governed by grade, width and defects in the piece.

9. Due consideration in rough stock should be given for the amount of wane that would be surfaced off in milling.

10. Lumber must be accepted on grade in form in which it was shipped. Any subsequent change in manufacture or mill work will prohibit an inspection for adjustment of claims, except with the consent of all parties interested.

11. The thickness and width of dressed lumber is governed by standardization of sizes and lumber S1S, S2S or S4S should be of a uniform thickness and width.

12. Planing mill work should be taken into consideration in all grades of dressed lumber, and its effect on a piece must be left largely

to the judgment of the inspector.

13. All lumber is turned out from the saw-mill on a practiced economy of thickness that safely provides for the dressing sizes, and stock sold in the rough must of necessity be taken from the lumber so manufactured.

14. The grade of partition should be determined from its poorer side, and is a special grade.

15. Lumber when worked should be graded the same as the respective grades when in the rough.

16. Unless otherwise provided for, lumber worked two sides shall be graded from its better side or face; lumber worked one side shall be graded from its surfaced face.

17. The examples given in this book do not in all cases include all of the different types in any grade.

18. The interpretation of any grade is intended to cover all lumber between the next higher grade above and the next grade below.

19. No grade under these rules is made with the idea of its fitness for any one specific use, although certain grades are strongly recommended for certain specific uses.

## DEFECTS.

Defects in lumber are the faults that are found which detract from the quality or appearance of the piece with the perfect body wood of the tree taken as a standard of perfection.

The prevailing idea "that a piece of lumber with knots in it is seriously defective," is erroneous as regards the ordinary uses to which lumber is put, as the sound, tight knotted piece loses none of its value because of the knot that is part of the piece, except in grades where appearance is the chief consideration.

The same is true, to such an extent, in regards to stain that this should be given the consideration accorded the minor lumber defects. The defining of various defects is difficult because the light or small defect in Common lumber is often a medium or large defect in Select lumber; and again, in Select lumber the defects are light, small, or serious, dependent upon the size of the piece or as they come into combination with other defects.

The interpretation of Rule and decision on grade is vested in a Bureau of Grades maintained for this purpose by the Western Pine Manufacturer's Association.



1. Stain is a discoloration that penetrates the wood fiber of a piece of lumber and of any color other than the natural color of the piece in which it is found; and is classed as light, medium, and heavy; and is generally blue or brown. Light stain is a pale shade of color. Medium stain is the shade of discoloration that takes up the colorings that develop between light and heavy. Heavy stain is the heaviest shade of color that develops in pine lumber.

2. Pitch is natural to all pine growths but is found to exist in a lesser degree in Idaho and Western White Pine growths than in almost any other pine species; therefore, in treating with light and medium pitch as defects it can be remembered that the basic piece of lumber is one with no evident signs of pitch. Light pitch is the lightly evident presence of pitch. Medium pitch is a slightly more evident trace of pitch than in the light. Heavy pitch is the very evident presence of pitch, even showing an accumulation by its coloring and consistency. Massed pitch is a clearly defined accumulation of solid pitch in a body by itself in the piece of lumber.

Pitch pockets are pockets that open between the wood grain as faults and hold, or have held, pitch. Small pitch pockets are of any size up to one-fourth inch in width by two

inches in length. Large pitch pockets are of any size greater than the small pitch pocket size.

3. Knots are portions of the branches of the tree. The branch grows at an angle in variance with the grain growth of the tree and because of strain on the branch and pressure of tree growth about them they are of a tough hard texture. Round knots, are those portions which have been sawn at right angles with the direction of growth from the center of the tree. Knots (branch knots), are knots which have been sawn at parallel angles with the direction of their growth. This type of knot generally has a small beginning at, or near, center of board and runs out at a wider width on the edge of the piece of lumber.

A horn knot is one that has been sawn at almost parallel angles with its direction but does not run out on the edge on face side of piece of lumber as does a V knot. Red knots result from a live branch growth and are firmly grown into the wood structure

Black knots result from a dead branch that the wood growth of the tree has surrounded, this very generally protects the knot from the decay that would result from exposure to the elements. Tight knots are those which because of growth or pressure are firmly held in the



piece of lumber in which they are found. Knots, not firmly set, are those which under ordinary conditions will hold their place in a dry board and yet under pressure can be started but not easily pushed out of the piece. Loose knots are the kind that can not be relied upon to remain in place in the board as the weight of the knot alone in a dry piece may cause it to drop out of its position. Sound knots are the kind that are free from injurious defect. Unsound knots are of a defective character. A pin knot is any size up to one quarter inch in diameter. A small knot is any size up to five-eighths in diameter in Select lumber and one and one-quarter inch in diameter in Common lumber. A large knot is any size over two inches in diameter.

4. Heart shake is a fault in the annual growths wherein the adhesion of one year's growth to another has failed in and around the heart portion of the tree which shows in openings between grain in the piece of lumber.

5. Heart pith is a dark brown, spongy substance varying from one-eighth to five-eighths inch in width as it shows on the face of a piece of lumber.

6. Season check is a crack in the wood construction of a piece of lumber due to the too

rapid seasoning (drying) of the piece.

7. Rot is decay i. e. the breaking up of the fibrous structure of the wood and it shows in various stages from the barely perceptible to soft and very evident.

8. Wane is a defect caused by the bark of the tree destroying the square edge, or edges, of a piece of lumber.

9. Sap in lumber is that portion of the wood which contained the sap juice for the nourishment of the tree in its growing state. It is lighter in color than the heart wood and rather prone to staining under certain conditions.

10. Torn grain is a roughened spot caused by machine tearing out bits of the wood in dressing against the grain.

## STANDARD MANUFACTURED SIZES.

Adopted as Official, November 6, 1914.

## IDAHO AND WESTERN WHITE PINE.

### Standard Sizes

#### Board Strips and Finish.

S1S or S2S to 25-32

S4S 25-32x $\frac{1}{2}$  inch scant on all widths.

#### Thick Common Finish and Tank Plank S4S.

1 $\frac{1}{4}$  to 1 $\frac{3}{8}$  by  $\frac{1}{2}$  scant of full width.

1 $\frac{1}{2}$  to 1 $\frac{3}{8}$  by  $\frac{1}{2}$  scant of full width.

2 to 1 $\frac{3}{4}$  by  $\frac{1}{2}$  scant of full width.

#### Shiplap.

1x8 to 25-32x 7 face.

1x10 to 25-32x 9 face.

1x12 to 25-32x11 face.

#### Grooved Roofing.

Same as S4S.

#### Flooring, D & M., CM. & S2S, Drop Siding and Ceiling.

1x 3 to 25-32x 2 $\frac{1}{4}$  face.

1x 4 to 25-32x 3 $\frac{1}{4}$  face.

1x 6 to 25-32x 5 $\frac{1}{4}$  face.

1x 8 to 25-32x 7 $\frac{1}{4}$  face.

1x10 to 25-32x 9 $\frac{1}{4}$  face.

1x12 to 25-32x11 $\frac{1}{4}$  face.

### Thick Flooring, D. & M. or S2S and CM.

1  $\frac{1}{4}$  x4 to 1  $\frac{1}{8}$  x3  $\frac{1}{4}$  face.

1  $\frac{1}{2}$  x6 to 1  $\frac{3}{8}$  x5  $\frac{1}{4}$  face.

2 x4 to 1  $\frac{3}{4}$  x3  $\frac{1}{4}$  face.

### Beveled Siding.

$\frac{1}{2}$  x4 to 7-16x3-16x3  $\frac{1}{2}$ .

$\frac{1}{2}$  x5 to 7-16x3-16x4  $\frac{1}{2}$ .

$\frac{1}{2}$  x6 to 7-16x3-16x5  $\frac{1}{2}$ .

### Shop and Factory.

1 S2S to 25-32.

1  $\frac{1}{4}$  S2S to 1 5-32.

1  $\frac{1}{2}$  S2S to 1 13-32.

2 S2S to 1 26-32.

Note: Pattern 106 Drop Siding is standard. All other patterns of drop siding or ceiling shall be considered as specials and not to exceed 10 per cent of the above and below grade that develops in running, is to be included.

### Lath.

Standard 4 ft. Lath  $\frac{3}{8}$  x1  $\frac{1}{2}$  inches.

## ASSOCIATION STANDARD GRADES.

Select grades for finishing purposes in Idaho White Pine and Western White Pine.

Bright sap shall not be considered a defect in any of the grades provided for and described in these rules. The qualities that will be demanded of these two different soft woods in the Select grades shall be a factor in their preparation.

### "B" Select and Better

1. "B" Select and Better shall consist of "B" Select and all the better product of the stock and may be 4 inches or wider and embraces all thicknesses manufactured in pine lumber.

2. Knots, light blue stain and light traces of pitch or small season checks are admissible.

3. A four-inch or six-inch piece should show but very slight traces of pitch or season check. Wider pieces can have more pitch or season checks, but it should be local and not scattered over the face of the piece.

4. The fact that the defects admissible in the grade of "B" and Better, must be of a nature that will not allow them to interfere with the high quality or appearance of this grade tends to make of this, a stock almost without defect.

## EXAMPLES.

Example 1. Piece 1x8-16. Has a small knot near one end, other end has light blue stain two inches wide on edge running out at six feet.

Example 2. Piece 1x8-16. Shows crossing stain across face of piece at one end six inches wide, at other end has one small knot.

Example 3. Piece 1x10-16. Has one inch of blue stain for one-third the length of the piece one small knot at each end and one five-eighths inch knot near center of board.

Example 4. Piece 1x10-16. Has light local pitch near one end and one small knot near other end.

Example 5. Piece 1x12-16. Has a small knot near each end, two and a half inches of light mottle blue stain for eight feet on one edge. The reverse side has three inches of blue stain on both edges for five feet at one end.

Example 6. Piece 1x10-16. The face of the piece is perfect, the reverse side shows wane on on edge for eighteen inches.



Example 7. Piece 1x12-16. Both edges of this board has mottled stain showing very light, varying in width from two to three inches and running full length of piece. No other defects are shown.

Example 8. Piece 1x20-16. Has rot stain three inches wide and eight inches long at one end, one three-quarter inch unsound knot at other end and two half-inch knots. The reverse side has same appearance, except a small streak of pitch and a half-inch of blue stain for four feet.

Example 9. Piece 1x14-16. Has two half-inch tight black knots, near the center a small pitch pocket which does not show through the board. The reverse side has three-quarter inch of wane for three feet and shows same knots as on face.

Example 10. Piece 2x12-16. Has one poor knot three-quarter inch in diameter but otherwise face is perfect. The reverse side shows blue stain on both edges three inches wide for four feet and one-half inch of wane for eight feet.

Example 11. Piece 2x14-16. At one end near edge has one and one-half inch knot, at other end very slight pitch for two feet, but not



showing any defined pitch streak. Reverse side shows three inches of blue stain for eight feet.

Example 12. Piece  $1\frac{1}{4} \times 14-16$ . Face side shows four inches slight mottled stain at one end, running out at four feet, but no other imperfections. Reverse side shows mottled stain over two-thirds of the piece. No knots in this piece.

Example 13. Piece  $1\frac{1}{4} \times 16-16$ . Face side shows five small tight black knots well scattered. Also three-fourth inch slight stain at one end running out at six feet.

### "C" SELECT

1. "C" Select may be 4 inches and wider and embraces all thicknesses manufactured in Pine lumber.

2. This grade is primarily based on the idea of furnishing a high class outside paint finish and its qualities are necessarily of a nature fitting it for the tests that will be demanded of it.

3. The defects admissible are the same as those in "B" Select but exist to a greater degree, yet in no single piece are found numerous and serious defects.

4. Medium blue stain covering one-third of the face or greater area as it shades to lighter is admissible when not in combination with other marked defects.

### Examples

**Example 1.** Piece 1x8-16. Shows three inches of medium blue stain for two feet and three small knots. The reverse side shows blue stain in four places.

**Example 2.** Piece 1x8-16. Has eight small firmly set knots scattered over the face; one of these knots is three-eighths inch in size, the others are one-quarter inch and less.

**Example 3.** Piece 1x8-16. Shows three feet light pitch on one edge at one end and one foot of rather heavy pitch at other end, no other defects.

**Example 4.** Piece 1x10-16. Has five very small knots well scattered, a season check near one edge and an inch of medium blue stain for two feet at the end on other edge.

**Example 5.** Piece 1x10-16. The face is free from defect except three and half inches of light blue stain for eight feet on one edge. The reverse side shows quite an amount of heavy blue stain.

Example 6. Piece 1x12-16. Has two inches of light blue stain on each edge, two one-inch tight knots and two one-half inch knots. Reverse side shows light stain clear across one-quarter of the piece.

Example 7. Piece 1x12-16. Has a very smooth appearance, but shows traces of pitch for three feet at one end and four small tight knots.

Example 8. Piece 1x12-16. This is an Idaho White Pine piece and has fifteen small pin knots, none of them more than one-quarter inch in diameter, well scattered, piece is perfectly bright and smooth in appearance.

Example 9. Piece 1x8-16. Very smooth in appearance with two inches light stain tapering off at four feet and three feet from other end is one five-eighths inch loose knot, no other defects. Reverse side shows same knot defect and stain four inches wide full length of piece.

Example. 10. Piece 1x14-16. Has four inches of light stain for five feet on one edge and a season check twelve inches long near one end. Reverse side shows one pitch pocket one-quarter inch wide and four inches long and a little more blue stain than is shown on face.

Example 11. Piece 1x8-16. The face side of this piece shows a light crossing stain at one

end and a small knot at the other end, in the middle of piece is a small pitch pocket. Reverse side shows spot rough mill work, five small knots and two small pitch pocket scabs.

**Example 12.** Piece 1x8-16. At first sight this board appears to be clear, but closer examination shows light pitch scattered over one-half the face. No other defects.

**Example 13.** Piece 1x16-16. Has eight small knots scattered over the face, from half-inch to a pin knot, two of these knots are not firmly set.

**Example 14.** Piece 1x14-14. Within one foot of one end is a one and one-quarter inch black knot, also a quarter-inch black knot and scattered over the face are two half-inch and two pin knots.

**Example 15.** Piece 1- $\frac{1}{4}$ x12-16. Face has light blue stain three inches wide on one edge for ten feet, other edge has three inches of medium blue stain for two feet, no other defect. Reverse side shows blue stain over full width for eight feet.

**Example 16.** 1- $\frac{1}{2}$ x20-16. Face shows worm holes sixteen inches from end in center, one three-quarter inch black knot three feet from

and on edge, a one-half inch black knot in center and seven feet from other end, within twelve inches of same end one red knot three-quarters by one and one-half inch near edge, and one-half inch of wane on one edge. Reverse side shows same knot defects somewhat larger and some season check.

Example 17. Piece  $1\frac{1}{4} \times 16-16$ . Has two fine season checks ten inches long, two small dry pitch pockets one-fourth by two inches long and one knot one and one-fourth inches in diameter. All of these defects are well scattered and the appearance of the piece is good.

Example 18. Piece  $1\frac{1}{2} \times 16-16$ . Shows face free of defects. Reverse side of piece shows two season checks two feet in length, five knots from one to two inches in diameter and six inches of blue stain full length on one edge.

Example 19. Piece  $2 \times 18-16$ . Face shows six inches of medium brown stain full length on both edges and two small knots in center of piece. Reverse side shows three season checks scattered along the center of piece and is entirely covered with brown stain.

Example 20. Piece  $1 \times 6-16$ . Has three small knots and shows slightly torn grain spot in two



places that does not materially injure the appearance or quality of the piece.

### "D" SELECT

1. "D" Select may be four inches and wider, and embraces every thickness in which pine lumber is manufactured.

2. This grade of lumber belonging as it does between the higher finishing lumber and the Common partakes somewhat of the nature of both. It is made up largely of pieces that carry a finish appearance on but one side only, the back of the piece often carrying a mass of defects. Other pieces carry the defects of the higher grades of finish but of a more serious nature from a quality standpoint, other pieces carry a high intrinsic value as compared to the next lower common grade but not a high appearance as compared to the higher finish grades. An other type often placed in this grade is a high line piece requiring a cut to eliminate a defect too serious to go into finish-work.

3. Medium stain over the entire face is admissible when not in combination with other serious defects.

### Examples.

**Example 1.** Piece 1x8-16. Face shows three small knots none of which are firmly set and two torn grain spots. The piece carries a good appearance.

**Example 2.** Piece 1x8-16. Face shows no defects. The back of piece shows spot of massed pitch 4 inches by two feet and traces of rot for seven feet.

**Example 3.** Piece 1x8-16. Shows medium stain over the entire face, no other defects.

**Example 4.** 1x8-16. Has eight small black knots well scattered with some of the knots not firmly set.

**Example 5.** Piece 1x10-16. Face shows medium stain for two-thirds the length, at eighteen inches from one end has one one-inch knot.

**Example 6.** Piece 1x12-16. Face shows blue stain for four feet at one end, near center are two half-inch knots, other end shows fine season checks in center for three feet.

**Example 7.** Piece 1x12-16. Dressed two sides. This piece shows good "C" select face. Reverse side shows six patches scattered along the length of the piece that failed to dress but



no portion of the piece shows a thinness that will interfere with the usual use of this grade of lumber.

Example 8. Piece 1x12-16. Within six feet of one end are five red knots one inch in size, scattered along the balance of piece are five small black knots. The appearance of this piece is good and the quality high.

Example 9. Piece 1x6-16. Has a crossing stain and one five-eighths inch knot at one end, three feet from other end one loose, soft, rotten knot, one and one-half inches in size. This is a typical cutting "D".

Example 10. Piece 1x16-16. Shows traces of pitch through the piece for eight feet and three small knots. If there was slightly less pitch this piece would grade "C" Select.

Example 11. Piece 1x12-16. This is a white pine piece and has twenty-four small knots scattered over the face, four of them are one-half inch in diameter and the balance are smaller, good, smooth looking piece.

## SIDING

### General Instructions.

1. Beveled Siding should be graded from the face side only.
2. Defects on the thin edge which will cover when laid should not be given the same consideration as defects elsewhere.

### "B" AND BETTER SIDING.

1. "B" and Better Siding shall consist of "B" Siding and all the better product of the stock.
2. "B" and Better Siding will admit of two or three sound tight knots, not to exceed one-half inch in diameter, well scattered over the face of the piece, or in the absence of knots a small amount of blue stain, or slight traces of pitch if local.

### Examples

Example 1. Piece 7-16x5½-16. Shows heavy pitch spot one inch long on thin edge, a torn defect on same edge that covers when laid, a pitch pocket one-quarter inch wide by one and one-quarter inches long.

Example 2. Piece 7-16x5½-16. Has four small smooth knots, one-quarter inch and less in size within four feet of one end near thin edge, and half inch round, red knot within two inches of thick edge and six feet from

same end.

Example 3. Piece 7-16x5½-16. Has a large curl four feet from one end and one one-half inch sound knot.

Example 4. Piece 7-16x5½-16. Has a black knot on thin edge that will cover, a one-half inch tight black knot one inch from thick edge and two pin knots that show.

Example 5. Piece 7-16x5½-16. This piece has three light crossing stains, but is otherwise perfect.

Example 6. Piece 7-16x5½-16. Has a three quarter inch sound knot five feet from one end and slight roughness in milling, otherwise perfect.

Example 7. Piece 7-16x5½-16. Has a one-half by three quarter inch tight knot on thick edge three feet from one end.

Example 8. Piece 7-16x5½-16. Has slight traces of pitch for one foot at one end, other end shows very small season check three inches long which is barely perceptible.

Example 9. Piece 7-16x5½-16. This piece is without defects.

Example 10. Piece 7-16x5½-16. Has light blue stain for one foot at one end, within three feet of other end is one three-eighths

inch black knot.

**Example 11.** Piece 7-16x5½-16. This piece has very slight mottled stain extending for six feet. These spots are hardly noticeable, piece is otherwise perfect.

### "C" SIDING.

1. "C" Siding will admit of two or three small knots, not exceeding one inch in diameter, or more knots when smaller, or a slight amount of pitch, or light season check is admissible.

2. Medium blue stain covering one-third the face is admitted if not in combination with marked defects.

3. Defects requiring one cut not to exceed four inches of waste, are allowed in high line pieces twelve feet long and longer.

### Examples

**Example 1.** Piece 7-16x5½-16. Has a three quarter inch black knot five feet from one end. A small pitch pocket and a very little local pitch within twelve inches of same end of piece.

**Example 2.** Piece 7-16x5½-16. Has a half-inch black knot on thick edge five feet from end, and at seven feet another same sized knot. Within five feet of the other end is a half-inch loose knot and one-quarter inch of heavy stain

for six feet on thick edge.

**Example 3.** Piece 7-16x5½-16. Has light blue stain extending over the whole face for five feet, no other defects are shown.

**Example 4.** Piece 7-16x5½-16. Has a one-half inch black knot three feet from one end that partly covers when laid, a pitch streak six inches long four feet from same end, a three-quarter inch red knot five feet from same end, and at other end two feet of pitch that will cover when laid.

**Example 5.** Piece 7-16x5½-16. Has five pin knots well scattered. On thick edge is one inch of medium blue stain for six feet, and on thin edge a little pitch that nearly covers when laid.

**Example 6.** Piece 7-16x5½-16. Has three knot holes on thin edge that will cover when laid, and four black knots one-quarter inch to one-half inch in diameter well scattered.

**Example 7.** Piece 7-16x5½-16. Has one and one-half inches of medium blue stain on thick-edge for ten feet, also a three-quarter inch knot on thin edge.

**Example 8.** Piece 7-16x5½-16. Has a one and one-half inch black, coarse knot six feet from end, otherwise nearly perfect. This is considered a cutting strip.



**Example 9.** Piece 7-16x5½-16. At first sight this piece appears to be perfect, but closer examination shows slight season checks scattered over nearly one-half of face.

**Example 10.** Piece 7-16x5½-16. Has light blue stain for two feet at one end, other end shows light pitch in center for three feet, otherwise perfect.

### **"D" SIDING**

1. "D" Siding will admit of considerable pitch and season check, with or without either of these defects a piece may have a number of small knots well scattered.

2. Medium blue stain covering the entire piece is allowed if not in combination with other marked defects.

### **Examples.**

**Example 1.** Piece 7-16x5½-16. One-third of face has heavy stain and scattered over the piece are a few small pin knots.

**Example 2.** Piece 7-16x5½-16. Has three black knots one inch in diameter, and slight traces of pitch.

**Example 3.** Piece 7-16x5½-16. Looks to be clear, but contains considerable pitch.

**Example 4.** Piece 7-16x5½-16. Has twelve small red knots and black knots, well scattered, in size from one-quarter to one-half

inch.

Example 5. Piece 7-16x5½-16. Has medium stain covering the entire face and one small pin knot.

Example 6. Piece 7-16x5½-16. The face of this piece is covered with medium blue stain for seven feet, also a small massed pitch streak near one end.

Example 7. Piece 7-16x5½-16. Has medium blue stain for four feet at one end, other end shows season checks for three feet.

Example 8. Piece 7-16x5½-16. Shows a foot of medium blue stain on one end, near center is defect requiring one cut showing four-inch waste, other end shows slight pitch for two feet.

Example 9. Piece 7-16x5½-16. At five feet from end shows knot hole requiring cut, and six feet from other end shows knot hole requiring another cut between this cut and same end is one one-half inch knot.

#### "E" SIDING:

1. This is the lowest recognized grade of beveled siding and will admit of stain, knot, pitch pockets, pitch and season check, defects not admissible in "D" Siding.

2. Many pieces showing seriously defective mill work or imperfect manufacture are admitted in this grade.



## **WESTERN WHITE PINE COMMON**

### **LUMBER**

1. The characteristics of Common Lumber as distinguished from finishing, consists of a general coarseness of appearance, caused by various defects and combination of defects in a greater or less degree according to the grade.

2. Checked knots in tight red knotted stock in Common lumber is not considered a defect, unless the opening is so pronounced as to injure the piece, for the purpose for which the grade was designed.

3. All Common Lumber thicker than inch shall be separated into the same units of value as is the inch lumber, bearing the same grade names and receiving the same general inspection on the same grade basis.

#### **No. 1 Common Boards and Strips.**

1. No. 1 Common Boards and Strips includes all sound knotted stock with the size of the knot the determining factor of the grade.

2. This grade is of a character that fits it for shelving, cornice, fine barn board and all uses where the best quality and appearance of common lumber is required.

3. Knots, light pitch, light stain season check, and small pitch pockets are admissible

if they do not affect the general utility of the piece.

### Examples.

**Example 1.** Piece 1x12-16. Has five red knots from one and one-half to two and one-half inches in diameter; also fifteen small knots all sound and well scattered and varying in size from a half inch to an inch and a quarter. This is a typical No. 1 Common.

**Example 2.** Piece 1x12-16. Has twenty-two small red knots from one-half to one inch in size, and one horn knot one inch by five extending from near center to edge of piece.

**Example 3.** Piece 1x12-16. Has a dozen red knots from one to two inches in size, a season check eight inches long, and a knot one by four inches.

**Example 4.** Piece 1x12-16. Has twelve black knots from three-eighths to three-quarter inch in size, three small pitch pockets, and two light crossing stains. This piece carries a good appearance.

**Example 5.** Piece 1x12-16. Has fifteen small red knots and four feet of light heart showing. A small horn knot has sloughed out on face of piece without much injury to the appearance.

**Example 6.** Piece 1x10-16. Has twelve small black knots and light mottled stain over entire face. Very smooth common appearance.

**Example 7.** Piece 1x8-16. Worked to drop siding. Shows five red knots from one to two inches in diameter and five black knots from one-half to three-quarter inch in size.

**Example 8.** Piece 1x6-16. Worked to two side bead and center bead pattern. Has nine red knots from one-half to two inches in size and one light crossing stain. Two of the knots have broken up slightly in milling with small injury to the appearance and quality of piece.

**Example 9.** Piece 1x6-16. Surface two sides and center matched. Has nine red knots from one to one and one-half inches in size and three small black knots fairly well set.

**Example 10.** Piece 1x8-16. Has three red knots two and one-quarter inches in diameter and six other red knots from one to two inches in size. Only two small knots appear on the edge of piece which makes of this a neat, good quality board.

## **No. 2 Common Board and Strips.**

1. No. 2 boards and strips are subject to the same general inspection as No. 1, except that coarser and larger knots, or their equivalents

form the basis of inspection.

2. Some of the most common types of knots admissible in this grade are, large knots, "V" knots, unsound knots, checked knots, and those not firmly set in the piece. Other defects common to this grade are, season check, heart shake, heart pith, pitch, pitch pockets, slight traces of rot, and occasional worm holes. No serious combination of the above defects is admissible in any one piece.

3. Blue stain covering the entire face is admissible when not in serious combination with other limit defects.

### Examples

Example 1. Piece 1x12-16. Has seven red knots with checked centers. These knots vary in size from one and one-half to two and one-half inches in diameter, and eight smaller knots. A portion of the center of one of the checked knots has broken out in dressing.

Example 2. Piece 1x12-16. Has twelve red knots from one and one-half to three inches in size and a medium blue stain over entire face.

Example 3. Piece 1x20-16. Has six large branch or "V" shaped knots, all red, from one and one-quarter to one and one-half inches wide, and from three to four inches long, also a half dozen smaller red knots from one to two

inches in diameter.

Example 4. Piece 1x16-16. Has four large branch knots, all black but tight, a little heart shake or season check, a touch of red stain for three feet, also eight or ten small knots well scattered.

Example 5. Piece 1x10-16. Has eighteen knots from one to two inches in size and heavy blue stain three inches wide on each edge, also four feet of heart pith showing on face.

Example 6. Piece 1x12-16. Has one sound knot three by four and one-half inches in center of board and nine other sound knots from one to three inches in size, also one season check ten inches in length.

Example 7. Piece 1x6-16. Piece covered with a heavy blue stain, and has a dozen small knots, both red and black.

Example 8. Piece 1x6-16. Has two red knots, two and one-half inches in size, four knots averaging an inch, and  $\frac{1}{2}$  dozen small ones. Type of a good No. 2.

Example 9. Piece 1x6-16. Worked to drop siding pattern. Has four knots two and one-fourth inches in size, two "V" knots three inches in length, and eleven small knots from one to one and one-quarter inches. Piece carries a good, lasting quality.

Example 10. Piece 1x6-16. Surfaced two



sides and center matched. Piece shows three season checks eight inches in length, a light stain over entire face and twelve small knots.

**Example 11.** Piece 1x10-16. Has nineteen red and black knots from one-half to two inches in size and streak pitch rather heavy for five feet at one end. The piece carries a good appearance.

**Example 12.** Piece 1x12-14. The face contains a large number of sound knots, and would be No. 1 were it not that it also has about a half dozen worm or grub holes, well scattered. If it were ten inches wide, fewer worm holes would be admitted.

**Example 13.** Piece 1x12-16. Has a dozen small knots, and a like number of pitch pockets scattered over the face, the largest of these pitch pockets being one-quarter by three inches long.

**Example 14.** Piece 1x12-16. Has six red knots from one and one-half to two and one-half inches in size; three black knots from one-half to one and one-quarter inches in size, and a small knot hole in one edge one-half inch deep by one inch long.

**Example 15.** Piece 1x8-16. Shiplap. Has three "V" knots four inches in length, seven red knots from one to two inches in size and seven feet of heart pith showing.



### No. 3 Common Boards and Strips.

1. The grade of No. 3. takes in much of the coarse product of the log and while the appearance of the grade is coarse the stock carries the inherent qualities demanded of the soft and lasting pines.

2. The defects most common to this grade are:

A—Large, loose, or unsound knots, or knot holes.

B—Considerable heart shake, season check, pitch or pitch pockets.

C—Any amount of stain and large branch knots.

D—Firm rot to a certain extent and large worm holes.

The serious combination of the above defects in any piece is not admissible.

#### Examples

**Example 1.** Piece 1x18-16. Badly split at one end for six feet and sprinkled with a dozen knots, No. 2 quality without the split.

**Example 2.** Piece 1x12-16. Has heavy pitch scattered over the whole board, but not in solid masses, also a half dozen small knots.

**Example 3.** Piece 1x12-16. Has fourteen red and black knots from one to two inches in diameter and four grub holes. The reverse side shows two skips in dressing, one for a

distance of three feet, and the other for five feet.

Example 4. Piece 1x12-16. Has six large branch knots which materially weaken the piece and gives it a very coarse appearance.

Example 5. Piece 1x10-14. Worked to ship-lap. Has four black knots about one and one-half inches in diameter, and one knot hole of like size.

Example 6. Piece 1x10-16. Has nine red knots from one to two inches in size and four red knots from three to four inches in size. A number of the knots are checked.

Example 7. Piece 1x10-14. Worked to ship-lap. Has four large pitch pockets, one is two inches wide by four inches long, the others are somewhat smaller. Also a naif dozen small knots.

Example 8. Piece 1x10-16. Worked to ship-lap. One end smooth looking, has a few small knots. the other end shows three feet containing firm red rot from four to six inches wide.

Example 9. Piece 1x8-16. Shiplap. Shows five black knots from one to two inches in size and massed pitch scattered for eight feet.

Example 10. Piece 1x8-16. Has no knot defects but piece is very pitchy full length, with some stain.

Example 11. Piece 1x8-16. Has eight red

knots from one to two and one-half inches in size and five black knots one inch in size. One of the black knots is loose and three others are not firmly set. A heavy blue stain covers the entire face.

Example 12. Piece 1x10-16. Full of coarse knots, all sound, but is so extremely coarse in appearance that the board is classed as No. 3. Without two or three of these coarse knots, it would be a satisfactory No. 2.

Example 13. Piece 1x8-16. Has twelve red and black knots from one to two and one-half inches in size, blue stain over entire face, and six season checks from six to fourteen inches in length.

Example 14. Piece 1x6-16. Has one inch of wane on one edge and heavy blue stain, also a small knot hole one inch in diameter, and one large coarse knot.

Example 15. Piece 1x6-16. Has pitch streak near one end, from one to three inches wide and four feet long, other end shows considerable season check.

Example 16. Piece 1x6-16. Has six small red knots and several branch knots that weaken the piece and gives it a coarse appearance.

Example 17. Piece 1x12-16. Has four branch knots two and one-half inches, ten red

knots from one to two and one-half inches in size, and heart shake in spots scattered along the full length of the piece.

Example 18. Piece 1x12-16. Has seventeen knots from two to three inches in size and a pinkish brown stain showing heavy on both sides of piece.

Example 19. Piece 1x12-16. Has fifteen pitch pockets of all sizes up to six inches long, and a half dozen small knots. This piece has a hard appearance but is a good, strong, serviceable board.

Example 20. Piece 1x12-12. Has seven red knots from one and one-half to three inches in size, these knots have badly checked centers. A rather heavy massed pitch three inches wide and running out at four feet, shows at one end on the edge of the piece.

Example 21. Piece 1x8-14. Has several small black knots one-quarter to five eighths inch in diameter, and three sound red knots from one and one-half to two inches in diameter. It also has two knot holes, one of them is one and one-quarter by one and one-half inches in size and is six feet from end of piece the other is three-quarters by two inches and situated three feet from same end.

#### No. 4 Common Boards and Strips.

1. The defects common to this grade are

much the same as those found in No. 3 but exist to a greater degree.

2. The most common serious defects are knot holes, and either red rot, or its equivalent in heavy massed pitch. Other types are, extremely coarse knotted, or waney, or excessive heart shake, or badly split, or badly checked pieces.

3. This grade especially meets the demands of the box manufacturer for a soft, easily worked pine in a grade that yields well in cut-up box product.

### Examples

Example 1. Piece 1x18-16. One-half of this board has the general appearance of a No. 2 Common. The other half is composed of red rot varying from firm to soft.

Example 2. Piece 1x12-16. Has six large knot holes, other knot defects are those of a No. 2 Common board.

Example 3. Piece 1x12-16. Has a great many large worm holes, considerable rot and a few coarse knots.

Example 4. Piece 1x12-14. Contains four large knot holes with other defects.

Example 5. Piece 1x12-16. Has the knot defects of No. 2 Common board but contains a large number of large worm holes. No rot or knot holes in the piece.



Example 6. Piece 1x12-12. Very badly split in two or three places, no serious rot or knot defects, but board is badly shattered.

Example 7. Piece 1x10-16. One-half of the face of the board shows heavy mass of pitch. The other half shows the knot defects of a No. 2 Common.

Example 8. Piece 1x12-16. Shows the knot defects of a No. 2 Common board, but has excessive heart shake.

Example 9. Piece 1x6-12. Shows a good face, but is excessively waney on back, there being four feet of it showing all slab. Face equal to No. 2 in quality.

### No. 5. BOARDS.

No. 5 Boards is the lowest recognized grade and admits all defects known in lumber, provided the piece is strong enough to hold together when carefully handled.



## RULES FOR GRADING IDAHO WHITE PINE COMMON LUMBER.

1. The characteristic of Common lumber as distinguished from finishing, consists of a general coarseness of appearance, caused by various defects and combination of defects in a greater or less degree according to grade.

2. Checked knots in tight red knotted stock in Common lumber is not considered a defect, unless the opening is so pronounced as to injure the piece, for the purpose for which the grade is designated.

3. Common lumber, one and one-fourth inches and thicker shall be graded the same as inch lumber.

### No. 1 Common Boards and Strips.

1. No. 1 Common Boards and Strips includes all sound tight knotted stock whether red or black knots, free from very large, coarse knots, or any imperfections that will weaken the piece.

2. This grade should be of a character fitting it for ordinary use, except finishing purposes.

3. Knots, small pitch pockets, light season check, or light pitch are admissible if they do not affect the general utility of the piece.

Light blue stain covering the entire face

is admissible if not in combination with other marked defects.

### Examples

Example 1. Piece 1x12-16. Has five red knots from one and one-half to two inches in diameter; also fifteen small knots all sound and well scattered and varying in size from a half inch to an inch and a quarter. This is a typical No. 1 Common.

Example 2. Piece 1x12-16. There are a great many knots in this piece, but they are well distributed and sound and tight. Six of them are red, from one and one-half to two inches in diameter, seven more red knots, about one and one-half inches, and four small tight black knots not over one-half inch in diameter.

Example 3. Piece 1x10-16 This piece worked four sides. Has twenty four small knots; an angling three-eighths inch knot has fallen out on the edge on the face side; the reverse side shows a small patch that failed to dress.

Example 4. Piece 1x8-16. Has eight red knots from an inch to an-inch and a half in diameter, each knot shows a small check across it and the piece shows light blue stain full length on one edge. This is a very smooth looking piece.

Example 5. Piece 1x8-16. Worked to drop-siding. Has four red knots about one and

one-fourth inches in diameter, and eleven small sound red knots, in size from one-half to one inch in diameter.

**Example 6.** Piece 1x10-14. Worked to drop-siding. This piece has six sound firmly set knots, from one-fourth to one inch in diameter, well scattered, there are also several very small season checks, these checks, however, are very fine and the board is sound and of good appearance.

**Example 7.** Piece 1x6-16. Surfaced two sides and center matched, (S2S and C. M.). Has twenty-two sound red knots, one being a knot three-quarters by four inches long, two knots in middle side by side are three-quarters of an inch in diameter, and the balance of knots are one-half inch and less in size.

**Example 8.** Piece 1x6-16, S2S and C.M. Has eighteen sound knots, three of which are black and tight. The three black knots are three-eighths inches in size and the others are from one-half to one inch in diameter. This is considered a good No. 1 strip.

**Example 9.** Piece 1x6-14. S2S and C. M. Has five perfect sound red knots, one and one-half inches in diameter and seventeen small red knots one-quarter to three-quarter inch in diameter. This is a typical No. 1 Strip.

**Example 10.** Piece 1x6-16. S2S & C. M. Has

twenty-two small sound knots, the two largest being about one inch in diameter; on the back at center of the piece slight wane shows on both edges for thirteen inches, but not enough to impair the tongue or groove.

## No. 2 Common Boards and Strips

1. No. 2 boards and strips are subject to the same general inspection as No. 1 except that coarser and larger knots, not necessarily sound, more pitch, pitch pockets and season checks are allowed. "V" and coarse branch knots, heart shake or slight traces of rot when firm, or occasional worm holes, are defects admissible in this grade.

2. Blue stain covering the entire face of the piece is admissible when not in combination with other marked defects.

### Examples.

Example 1. Piece 1x12-16. Has seven red knots with checked centers. These knots vary in size from one and one-half to two and one-half inches in diameter, and eight smaller knots. A portion of the center of one of the checked knots has broken out in dressing.

Example 2. Piece 1x12-16. Very smooth in appearance, looks like a "D" Select; contains a large number of small black knots, two of which are not firmly set.

Example 3. Piece 1x20-16. Has six large branch or "V" shaped knots, all red, from one and one-quarter to one and one-half inches wide, and from three to four inches long, also a half dozen smaller red knots from one to two inches in diameter.

Example 4. Piece 1x10-14. Worked to drop siding. Has nine red knots from one and one-half to two inches in diameter and a dozen smaller knots, both red and black, from one-half to one and one-quarter inches. This is a very common type of No. 2 Board.

Example 5. Piece 1x12-14. Contains ten red knots from two to three inches in diameter, and a half dozen smaller ones, all sound, also a single grub or worm hole.

Example 6. Piece 1x12-14. The face contains a large number of sound knots, and would be No. 1 were it not that it also has about a half dozen worm or grub holes, well scattered. If it were ten inches wide, fewer worm holes would be admitted.

Example 7. Piece 1x12-16. Has a dozen small knots, and a like number of small pitch pockets, scattered over the face, the largest of these pitch pockets being one-quarter by three inches long.

Example 8. Piece 1x8-16. Worked to drop siding. Has eight small knots and four



branch knots one and one-quarter by four inches in size. The piece is strong enough for all ordinary purposes and a good fair quality.

Example 9. Piece 1x6-16. S2S and C. M. Has eighteen small red and black knots none of which are over one inch in size, also has three grub holes.

Example 10. Piece 1x6-14. S2S and C. M. Has eight red and black knots from one-half to two inches in diameter and on one edge is a hole where a half inch knot has sloughed out in working.

Example 11. Piece 1x6-14. S2S and C. M. Has seven small black knots and would readily be admitted in "D" Flooring were it not that three of the knots are loose.

Example 12. Piece 1x6-16. S2S and C. M. Has three red knots two and one-half inches in diameter, and thirteen small red knots. This is a typical No. 2 Strip.

Example 13. Piece 1x6-16. S2S and C. M. This is a smooth looking sound knotted piece and would grade No. 1 were not that the entire face is covered with medium blue stain.

Example 14. Piece 1x6-16. Has a streak of very firm red rot, about one inch wide, running six feet in length from one end, also a half dozen small knots well scattered. The rot is barely perceptible in the rough strip and is



therefore of a smoother appearance than the average No. 2 Fencing Strip.

**Example 15.** Piece 1x6-16. S2S and C. M. Piece shows a number of small red knots, four feet of heart pith, and four small branch knots. Piece is coarse in appearance but of good lasting quality.

### **No. 3 Common Boards and Strips.**

The general appearance of this grade of lumber is coarse, admitting:

1. Large, loose, or unsound knots.
2. An occasional knot hole.
3. A great deal of pitch and pitch pockets.
4. Some red rot and pieces that are badly season checked.
5. Large worm holes and any amount of blue stain.
6. Not a serious combination of these defects in any one piece is admissible.

### **Examples**

**Example 1.** Piece 1x18-16. Badly split at one end for six feet and sprinkled with a dozen knots.

**Example 2.** Piece 1x12-16. Has heavy pitch scattered over the whole board, but not in solid masses, also a half dozen small knots.

**Example 3.** Piece 1x12-16. Has fourteen red and black knots from one to two inches

in diameter and four grub holes. The reverse side shows two skips in dressing one for a distance of three feet and the other for five feet.

**Example 4.** Piece 1x12-16. Has six large branch knots which materially weakens the piece and gives it very coarse appearance.

**Example 5.** Piece 1x10-14. Worked to ship-lap. Has four black knots about one and one-half inches in diameter, and one knot hole of like size.

**Example 6.** Piece 1x10-14. Has eight small knots one inch in diameter. These knots are black and some of them are loose. If knots were sound, the board would pass for a "D" Select.

**Example 7.** Piece 1x10-14. Worked to ship-lap. Has four large pitch pockets, one is two inches wide by four inches long, the others are somewhat smaller. Also a half dozen small knots.

**Example 8.** Piece 1x10-16. Worked to ship-lap. One end smooth looking, has a few small knots. The other end shows three feet containing red rot four to six inches wide.

**Example 9.** Piece 1x8-16. Worked to ship-lap. Shows a dozen small black knots and red rot of a firm texture over one-third of its face.

**Example 10.** Piece 1x10-16. Worked to ship-lap. Has knot defects as are found in No. 1

Common, but also has a dozen large worm holes well scattered, which makes it No. 3.

Example 11. Piece 1x10-14. Worked to shiplap. Has four large black knots, three inches in diameter, one of them loose, also a few pin knots and some blue stain.

Example 12. Piece 1x10-16. Full of coarse knots, all sound, but is so extremely coarse in appearance that the board is classed as No. 3. Without two or three of these coarse knots, it would be a satisfactory No. 2.

Example 13. Piece 1x8-12. Worked to shiplap. This piece is badly season checked, has the knot defects of a No. 1 Common and has good appearance.

Example 14. Piece 1x6-16. Has one inch of wane on one edge and considerable blue stain, also a small knot hole one inch in diameter, and one large coarse knot.

Example 15. Piece 1x4-16. S2S and C. M. Has nine small red and black knots. The back of piece shows heavy wane on the tongue edge for nine feet and a rather heavy wane on the groove edge for six feet.

Example 16. Piece 1x6-16. Has six black knots from one to two inches in diameter.

Example 17. Piece 1x10-14. Has one large sound knot two and one-half inches in diameter at one end. Two feet from the same end has

loose knot three-quarter inch in diameter, and five feet from the same end has dead sap two inches wide on each edge for four feet, also two good sized worm holes, and six feet from one end one sound red knot one and one-half inches in size, and one three-quarter inch knot hole.

Example 18. Piece 1x12-16. Has fifteen pitch pockets of all sizes up to six inches in length, and a half dozen small knots. This piece has a hard appearance but is a good strong, serviceable board.

Example 19. Piece 1x12-14. Has five large sound knots, in size from one and one-half to three inches in diameter, these knots have badly checked centers, about four feet from one end has a knot hole one and one-half inches in diameter, and an open pitch seam twelve inches long.

Example 20. Piece 1x8-14. Has several small black knots one-quarter to five-eighths inch in diameter, and three sound red knots from one and one-half to two inches in diameter. It also has two knot holes, one of them one and one-quarter by one and one-half inches in size and is six feet from end of piece, the other is three-quarters by two inches and three feet from the same end.

Example 21. Piece 1x6-16. S2S and C. M.

Has a one inch knot hole four feet from one end, scattered over the face are ten knots, in size from one to two inches, two of them being loose.

#### **No. 4. Common Boards and Strips.**

1. The predominating defects characterizing this grade are red rot and knot holes.

2. Other types are pieces showing numerous large worm holes, pieces that are extremely coarse knotted, waney, or showing excessive heart shake, extremely pitchy, or badly checked or split.

#### **Examples.**

**Example 1.** Piece 1x18-16. One-half of this board has the general appearance of a No. 2 Common. The other half is composed of red rot varying from firm to soft.

**Example 2.** Piece 1x12-16. Has six large knot holes, other knot defects are those of a No. 2 Common board.

**Example 3.** Piece 1x12-14. Contains four large knot holes with other defects.

**Example 4.** Piece 1x12-16. Has a great many large worm holes, considerable rot and a few coarse knots.

**Example 5.** Piece 1x12-16. Has the knot defects of No. 2 Common board, but contains a large number of large worm holes. No rot or knot holes in this piece.

**Example 6.** Piece 1x12-12. Very badly split in two or three places, no serious rot or knot defects, but board is badly shattered.

**Example 7.** Piece 1x12-16. Shows the knot defects of a No. 2 Common board, but has excessive heart shake.

**Example 8.** Piece 1x14-16. Shows a good face, but is excessively waney on back, there being four feet of it showing all slab. Face equal to No. 2 in quality.

### No. 5 Boards

No. 5 Boards is the lowest recognized grade and admits all defects known in lumber, provided the piece is strong enough to hold together when carefully handled.



## TANK STOCK

Tank stock shall be graded with the view of supplying a stock that can be used entirely for the construction of water tanks.

1. Each piece shall be practically straight and practically free from wane.

2. All defects natural to common lumber are admissible in this grade provided they do not destroy the usefulness of the piece for tank purposes.

3. Particular care should be exercised in selecting the stock with regard to the edges so that there may not be defects that lead to leakage in preparation of the groove or in smoothing for close fitting.

A sound edge knot shall not be considered a defect provided it does not extend through more than half the thickness.

NOTE—Tank stock should be of the sizes carried in thick common lumber. When tank stock of a particular appearance is wanted, it can be ordered selected from one, two or three common grades,—otherwise it will be graded without regard to appearance.

## **RULES FOR MEASUREMENT OF FACTORY PLANK.**

Factory Plank may be measured with either a rule or a tape line.

When a rule is used the number of feet nearest the actual measurement shall be taken.

The additional thickness over inch shall be added to the surface measurement of the total amount measured.

### **Shop and Factory Standard Sizes.**

1 in S2S to 25-32 in.

1¼ in. S2S to 15-32 in.

1½ in. S2S to 13-32 in.

2 in. S2S to 12-32 in.

TOP RAIL

PANEL

MULLEN

PANEL

RAIL

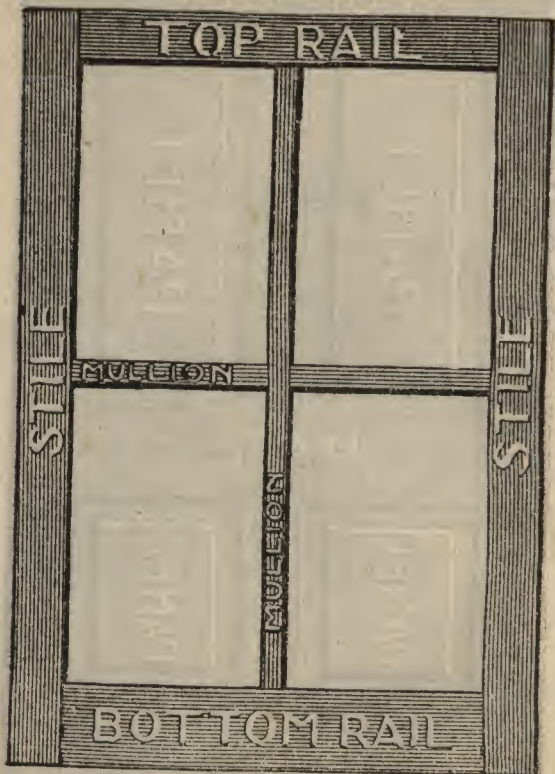
PANEL

MULLEN

PANEL

RAIL

Door Showing Cuttings.



Sash Showing Cuttings.

## DOOR CUTTINGS

The figures on the left of the brackets show the number of feet and the decimal parts in each cutting.

The figures on the right show the number of feet and approximate fractions of a foot in each piece of cutting grouped within the various brackets. These fractional figures on the right of the brackets are sufficiently accurate for practical purposes and are to be used in computing the percentage of cuttings in a factory plank.

### Stiles.

5¼ in.x6 ft.	8 in.—2.92 ft.	}	3
5¼ in.x6 ft.	10 in.—2.99 ft.		
5¼ in.x7 ft.	—3.06 ft.		
5¼ in.x7 ft.	2 in.—3.14 ft.	}	3¼
5¼ in.x7 ft.	4 in.—3.21 ft.		
5¼ in.x7 ft.	6 in.—3.28 ft.		
6 in.x6 ft.	8 in.—3.33 ft.		
6 in.x6 ft.	10 in.—3.42 ft.	}	3½
6 in.x7 ft.	—3.5 ft.		
6 in.x7 ft.	2 in.—3.56 ft.		
6 in.x7 ft.	4 in.—3.66	}	3¾
6 in.x7 ft.	6 in.—3.75 ft.		



## MUNTINS

5¼ in.x3 ft.	6 in.—1.53 ft.	} 1½
5¼ in.x3 ft.	8 in.—1.6 ft.	
5¼ in.x3 ft.	10 in.—1.68 ft.	} 1¾
5¼ in.x4 ft.	—1.75 ft.	

## Rails

9 in.x2 ft.	4 in.—1.75 ft.	} 1¾
9 in.x2 ft.	6 in.—1.875 ft.	
9 in.x2 ft.	8 in.—2 ft.	} 2
9 in.x2 ft.	10 in.—2.125 ft.	
9 in.x3 ft.	—2.25 ft.	} 2¼
10 in.x2 ft.	4 in.—1.94 ft.	} 2
10 in.x2 ft.	6 in.—2.08 ft.	
10 in.x2 ft.	8 in.—2.22 ft.	} 2¼
10 in.x2 ft.	10 in.—2.36 ft.	
10 in.x3 ft.	—2.5 ft.	} 2½

## Top Rails

5¼ in.x2 ft.	4 in.—1.02 ft.	} 1
5¼ in.x2 ft.	6 in.—1.09 ft.	
5¼ in.x2 ft.	8 in.—1.17 ft.	} 1¼
5¼ in.x2 ft.	10 in.—1.25 ft.	
5¼ in.x3 ft.	—1.31 ft.	

## RULES FOR GRADING WESTERN WHITE PINE AND IDAHO WHITE PINE.

### Factory Lumber—Plank.

1. Grades as described under this head are valued for cutting qualities only, and should not be confounded, either in quality or value, with grades outlined in another part of this book for yard purposes.

2. Factory plank shall be measured for the percentage of door cuttings that can be obtained with the grade work carried to each individual door cutting piece found in the plank.

3. Two grades of Door Cuttings only shall be recognized and are to be known as No. 1 and No. 2 Cuttings.

4. The only defect admissible in No. 1 Door Cuttings is white sap.

5. The grade of No. 2 Door Cuttings will admit of but one of the following defects in any one piece.

A.—A small knot of sound character not to exceed five-eighths of an inch in diameter.

B.—Light stain which does not cover an area greater than one-half the surface of one side of the piece

C.—One or more small season checks, the combined length not exceeding eight inches.

D.—One small pitch pocket one-eighth by one inch in size showing on one side.

E.—Slightly torn grain on one side of piece.

F.—A light pitch and pitch streaks that do not make a pronounced defect.

NOTE:—In determining the percentage of door cuttings, consideration must be given to the fact that plank are to be ripped full length in such a manner as will yield the highest grade and largest percentage of door cuttings before cross cutting, except in such cases where plank will yield a higher value by being first cross cut for rails. In such instances as when stock is cross cut for rails, where some of the stock so obtained is too poor for either No. 1 or No. 2 rails, and yet contains stiles or muntins, or top rails, which can be obtained by ripping this cross cut stock, the door cuttings so obtained shall be figured in when determining percentages.

## SHOP COMMON

### No. 1 Shop Common.

The sizes and grades of cuttings admissible in the grade of No. 1 Shop Common are as follows:

1. No. 1 Stiles in width  $5\frac{1}{4}$  or 6 inches and in length from 6 feet 8 inches to 7 feet 6 inches

2. No. 1 Rails, 9 to 10 inches wide and from 2 feet 4 inches to 3 feet in length.

3. No. 1 Muntins,  $5\frac{1}{4}$  inches wide and from 3 feet 6 inches to 4 feet in length.

4. Any number of pieces of either Stiles or Rails mentioned above are admissible in the grade of No. 1 Shop Common; but only two muntins of the sizes mentioned above shall be considered, and one No. 2 Door Stile may also be considered, in securing the required percentage of cuttings in any given plank.

5. Each plank of No. 1 Shop Common shall contain from 50 per cent to 70 per cent of Door Cuttings of the sizes and grades above mentioned.

### No. 2 Shop Common.

The sizes admissible in No. 2 Shop Common are as follows:

1. Stiles in width  $5\frac{1}{4}$  or 6 inches, and from 6 feet 8 inches to 7 feet 6 inches in length.

2. Rails 9 or 10 inches in width and from 2 feet 4 inches to 3 feet in length.

3. Top Rails  $5\frac{1}{4}$  inches wide and from 2 feet 4 inches to 3 feet in length. Top Rails must, however, be of No. 1 Door Cutting quality, but figured as No. 2 Door Cuttings.

4. Muntins  $5\frac{1}{4}$  inches wide and from 3 feet 6 inches to 4 feet in length.

5. Any number of cuttings of any one of the above sizes are admissible in the grade of No. 2 Shop Common.

6. Each plank of No. 2 Shop Common shall contain either one of the following: At least 25 per cent of No. 1 Door Cuttings, or not less than 40 per cent of all No. 2 Door Cuttings or not less than 33 1-3 per cent No. 1 and No. 2 Door Cuttings combined.

### No. 3 Shop Common.

One and one-fourth inches and thicker, will admit all below the grade of No. 2 Shop Common that is of a cutting type, and suitable for sash, door or other cuttings.

### FACTORY SELECTS.

#### Factory "C" Select and Better.

The grade of Factory "C" Select and Better shall contain 70 per cent and more of No. 1 Door Cuttings in the sizes specified as admissible in No. 1 Shop.



## INCH SHOP COMMON.

1. There shall be only one grade of inch Shop Common.

2. Cuttings shall be  $9\frac{1}{2}$  inches wide or wider and 18 inches long or longer, or 5 inches wide or wider and 3 feet long or longer.

3. Cuttings  $9\frac{1}{2}$  inches wide or wider and less than 3 feet in length shall be free from defects on both sides, except white sap.

4. Cuttings 5 inches wide or wider and 3 feet long or longer shall have a "C" Select or Better face.

5. Each piece of Inch Shop Common shall contain 50 per cent or more of any one cutting or combination of cuttings, described in the foregoing rules for this grade.

## SHORT BOX

Short Box shall include lumber twelve to forty-seven inches long, inclusive, three inches and wider, and No. 4 and better.

## MIXED WOODS—Standard Sizes

### Dimension S1S1E.

2x 4 to  $1\frac{5}{8}$ x  $3\frac{5}{8}$

2x 6 to  $1\frac{5}{8}$ x  $5\frac{1}{2}$

2x 8 to  $1\frac{5}{8}$ x  $7\frac{1}{2}$

2x10 to  $1\frac{5}{8}$ x  $9\frac{1}{2}$

2x12 to  $1\frac{5}{8}$ x  $11\frac{1}{2}$

3x 4 to  $2\frac{1}{2}$ x  $3\frac{5}{8}$

3x 6 to  $2\frac{1}{2}$ x  $5\frac{5}{8}$

3x8 to  $2\frac{1}{2}$ x  $7\frac{1}{2}$

3x10 to  $2\frac{1}{2}$ x  $9\frac{1}{2}$

3x12 to  $2\frac{1}{2}$ x  $11\frac{1}{2}$

### Timbers S1S1E or S4S.

4x4 to  $3\frac{1}{2}$ x  $3\frac{1}{2}$

4x6 to  $3\frac{1}{2}$ x  $5\frac{1}{2}$

6x6 to  $5\frac{1}{2}$ x  $5\frac{1}{2}$

6x8 to  $5\frac{1}{2}$ x  $7\frac{1}{2}$

8x8 to  $7\frac{1}{2}$ x  $7\frac{1}{2}$

### Boards S1S or S2S to $\frac{3}{4}$ in.—Boards S4S.

4 in to  $\frac{3}{4}$ x  $3\frac{1}{2}$

6 in. to  $\frac{3}{4}$ x  $5\frac{1}{2}$

8 in. to  $\frac{3}{4}$ x  $7\frac{1}{2}$

10 in. to  $\frac{3}{4}$ x  $9\frac{1}{2}$

12 in. to  $\frac{3}{4}$ x  $11\frac{1}{2}$

## SHIPLAP

- 4 in. to  $\frac{3}{4}$  x 3 in. face.
- 6 in. to  $\frac{3}{4}$  x 5 in. face.
- 8 in. to  $\frac{3}{4}$  x 7 in. face.
- 10 in. to  $\frac{3}{4}$  x 9 in. face.
- 12 in. to  $\frac{3}{4}$  x 11 in. face.

## Drop Siding, D. & M., S2S and CM and Ceiling.

- 4 in to  $\frac{3}{4}$  x  $3\frac{1}{4}$  face.
- 6 in to  $\frac{3}{4}$  x  $5\frac{1}{8}$  face.
- 8 in. to  $\frac{3}{4}$  x  $7\frac{1}{8}$  face.

## Thick Flooring.

- $1\frac{1}{4}$  x 3 in. to 1 1-16 x  $2\frac{1}{4}$  face.
- $1\frac{1}{4}$  x 4 in. to 1 1-16 x  $3\frac{1}{4}$  face
- $1\frac{1}{4}$  x 6 in. to 1 1-16 x  $5\frac{1}{8}$  face.
- $1\frac{1}{2}$  x 3 in. to 1 5-16 x  $2\frac{1}{4}$  face.
- $1\frac{1}{2}$  x 4 in. to 1 5-16 x  $3\frac{1}{4}$  face.
- $1\frac{1}{2}$  x 6 in. to 1 5-16 x  $5\frac{1}{8}$  face.

## Finish S1S and S2S.

- 1 to  $\frac{3}{4}$
- $1\frac{1}{4}$  to 1 1-16
- $1\frac{1}{2}$  to 1 5-16

## Finish Widths S1E or S2E.

- $\frac{1}{2}$  inch scant.

## MIXED WOODS

1. White Fir, Spruce, Cedar, Fir and Larch, Board, Strips, and Thicker Stocks, are graded under the rules that are used for the inspection of Idaho White Pine.

2. In mixed woods. the stocks of selects and Common carry the same appearance, grade for grade in the general measurement of defects, as do stocks of Idaho White Pine.

3. The individuality of each wood is maintained in the preparation of stocks for shipments, except under special agreement between buyer and seller for a mixed wood stock.

## DIMENSION AND TIMBERS

### No. 1.

1. Dimension and timbers will admit of all defects common to lumber that do not materially impair the strength or the piece.

2. On the basis of 2x4 wane on edge is admissible for one-third the length and one-third the thickness and one-half the width. In all cases the piece should have two edges and one side good for nailing purposes.

3. Small dimension must be moderately straight and larger dimension must be more so.

4. A few worm holes are admissible.

5. Dimension, heavy planking and timbers may be made up of Fir, Larch and Pine in any proportion.

## CRIBBING

1. Cribbing will admit of large coarse knots, considerable wane, firm rot, pitch, worm holes, badly crooked pieces, and other defects which weaken and impair the piece to such an extent as to render it unfit for the common grade of dimension.



## LATH

Owing to the rapidity with which Lath are manufactured and necessarily handled in grading the misplacement of an occasional piece is practically unavoidable. For this reason a variation of ten per cent or less off grade is provided for in our rules. This provision is intended to cover accidentally misplaced pieces only, and every reasonable effort should be made to have the grade conform to the specifications without regard to this percentage provided for misplaced pieces.

### No. 1 Pine Lath.

1. No. 1 Pine Lath shall be butted to not less than thirty-one and three-fourths inches or forty-seven and three-fourths inches long, not more than one-eighth of an inch scant of one and one-half of an inch wide and not more than one-sixteenth of an inch scant of three-eighths of an inch thick, and of sound material.

2. Will admit wane one-third the thickness, and one-third the width for one-third the length on one side of the piece or its equivalent otherwise located, when not in combination with other serious defects.

3. Any number of pin knots, three or four three-quarter inch knots well scattered, or more smaller knots, all well set, firm and sound that do not weaken the piece are admissible to four

foot, and a proportionately less amount in a thirty-two inch No. 1 Lath.

4. Moderate pitch extending over one-half the surface of the piece that does not materially impair the usefulness is admissible when not in serious combination with other defects.

5. A few worm holes in an otherwise sound piece are admissible.

6. Stain shall not be considered a defect, although mould that has caused the surface of the piece to decay or scale off, is a defect not admissible in this grade.

7. Ten per cent or less of No. 2 Lath shall be allowed in this grade.

#### No. 1 Mixed Lath.

No. 1 Mixed Lath shall be graded by the same rules and specifications, and subject to the same percentage of No. 2 given for No. 1 Pine Lath, and may consist of any two or more of the following named woods: Western White Pine, White Pine, Black Pine, Spruce, Fir, Cedar and Larch.

#### No 2 Lath

1. No. 2 Lath may consist of any one or a mixture in any proportions of any two or more of the following named woods: Western White Pine, White Pine, Black Pine, Spruce, Fir, Cedar and Larch.

2. Pieces of No. 1 quality with an average of not more than one-fourth of an inch scant in width, and one-eighth of an inch scant in thickness are admissible.

3. No. 2 Lath may contain firm streaks and patches of rot, sound knots, an occasional loose knot or knot hole, dead wood, worm holes, wane, season checks, pitch and pitch pockets, that by themselves or in combination with these or other defect do not seriously impair the usefulness of the piece.

4. Both ends of a No. 2 Lath should have at least an inch in width of firm wood for nailing.

5. Ten per cent above or below this grade is admissible.

